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the subscript x in u_x . This is a general law and it enables us to generate the 36 equations of work completed as x takes different values from 1 to 36.

End of 1 day, $u_1 - u_0 = 0.002[6 - (1.05)^1] + [0] \dots (10);$

End or 2 days, $u_2 - u_1 = 0.202[6 - (1.05)^1] + 0.012[(1.05)^1 - 1] \dots (11);$

End of 35 days, $u_{35} - u_{34} = 0.002[6 - (1.05)^{34}] + 0.012[(1.05)^{34} - 1] \dots (44);$ and

End of 36 days, $u_{36} - u_{35} = 0.002[6 - (1.05)^{35}] + 0.012[(1.05)^{35} - 1] \dots (45).$

Add the equations and have

$$u_{36} - u_0 = 0.002\{216 - [(1.05)^0 + (1.05)^1 + \dots + (1.05)^{35}]\} \\ + 0.012[(1.05)^1 + (1.05)^2 + \dots + (1.05)^{35} - 35] \dots (46).$$

Sum the first term of the second member of (46) for the work completed by A in 36 days, and sum the second term for the work completed by B in 35 days, and have:

$$\text{for A's work, } 0.002\{216 - 20[(1.05)^{36} - 1]\} = 0.2403 +; \\ \text{and for B's work, } 0.012\{21[(1.05)^{35} - 1] - 35\} = 0.7180 +.$$

A's work for 36 days + B's work for 35 days = $0.2403 + 0.7180 = 0.9583 +$.

The unfinished work = $1 - 0.9583 = 0.0417 -$; work to be finished by A and B in 0.72 day.

For A's unfinished part we have $(0.0417)(0.01)(0.72) = 0.0003$; and $0.2403 + 0.0003 = 0.2406$ = the total part completed by A.

For B's unfinished part we have $(0.8583)(0.06)(0.72) = 0.0414$; and $0.7180 + 0.0414 = 0.7594$, the total part completed by B.

A's total + B's total = $0.2406 + 0.7594 = 1$, as it should.

A's share of the money, therefore, = $\$300 \times (0.2406) = \72.18 ; and B's share = $\$300 \times (0.7594) = \227.82 .

Also solved by V. M. Spunar.

GEOMETRY.

369. Proposed by W. J. GREENSTREET, A. M., Editor, Mathematical Gazette, Stroud, England.

Prove by inversion that if two circles cut at a given angle, touch each a given circle, and pass each through the same fixed point, then shall the envelope of the points of contact be a conic.

No satisfactory solution of this problem has been received.